

SERMC Safety SOP 21

Subj: SERMC Metals of Toxic Significance Program

Ref: (a) OPNAVINST 5100.23, (series), Navy Safety and Occupational Health Manual, Volume 1: Navy Safety Management System
(b) 29 CFR 1915.1000, Air contaminants
(c) 29 CFR 1910.1018, Inorganic Arsenic
(d) 29 CFR 1915.1024, Beryllium
(e) 29 CFR 1910.1025, Lead
(f) 29 CFR 1915.1026, Hexavalent Chromium
(g) 29 CFR 1910.1027, Cadmium
(h) 29 CFR 1910.1200, Hazard communication
(i) NMCPHC-TM OM 6260 "Medical Surveillance Procedures Manual and Medical Matrix" (latest revision)
(j) SERMC Safety SOP 7, Hazardous Material Control and Management Program (HMC&M)
(k) SERMC Safety SOP 15, Respiratory Protection Program
(l) SERMC Safety SOP 42, Regulated Waste Program

Encl: (1) SERMC Toxic Metal Work Processes: Minimum Requirements
(2) Toxic Metal Work Area Sign
(3) Regulated Area Suiting/Un-Suiting Policies For Operations Equal to or Exceeding the PEL

1. Purpose. To provide policies, information, guidance, and minimum mandatory requirements necessary to protect personnel at Southeast Regional Maintenance Center (SERMC) performing processes where there is exposure to metals of toxic significance.

2. Cancellation. This is a revision to address changes resulting from the release of revision "H" of reference (a) on 1 AUG 2019 and beryllium sampling results.

3. Applicability. This SOP applies to SERMC personnel performing work with potential exposure, of any kind, to arsenic, beryllium, lead, cadmium, hexavalent chromium, or nickel.

4. Responsibilities.

a. The Commanding Officer will ensure compliance with the provisions of this SOP in accordance with reference (a).

b. Supervisors will:

(1) Ensure personnel comply with the requirements of this SOP.

(2) Prohibit personnel from performing work where potential exposure to metals of toxic significance exist until provided appropriate training as addressed in section 6 of this SOP.

(3) Ensure ship's force personnel assigned to SERMC who perform work involving exposure to metals addressed in this SOP comply with the requirements of this SOP.

(4) Ensure personnel use applicable engineering controls, identified in Enclosure (1) of this SOP and/or reference (k) as required.

(5) Ensure personnel wear Personal Protective Equipment (PPE) specified in applicable Safety Data Sheets (SDS), Periodic Industrial Hygiene Survey (PIHS), Job Hazard Analysis (JHAs), and this SOP.

(6) Notify the Safety Department immediately of any new materials or processes containing or involving the metals addressed in this SOP.

c. SERMC Safety Department will:

(1) Administer this program in accordance with references (a) through (l).

(2) Develop required training.

(3) Assist in the development and/or maintenance of SOPs and Job Hazard Analyses (JHAs).

(4) Review the command's current Periodic Industrial Hygiene Survey (PIHS) to ensure that SERMC work processes involving metals of toxic significance are identified.

(5) Identify process specific engineering and administrative controls and provide required PPE as necessary.

(6) Enter personnel into appropriate medical surveillance programs when they have met the criteria specified in paragraph h, Section 6, of this SOP or Naval Medicine Readiness and Training Unit (NMRTU), Mayport - Industrial Hygiene (IH) Division identifies processes/exposures that may warrant medical monitoring.

(7) Maintain required records, including Air monitoring data, Objective data, Medical surveillance, and Training records, as required by references (c) through (g) and (k).

d. Personnel in affected Shops/Codes will;

(1) Follow process specific controls (PPE, ventilation, and respiratory protection) when performing work that can generate or cause exposure to the toxic metals addressed in this SOP.

(2) Ensure the Safety Department is notified when new work processes involving toxic metals identified in this SOP are being performed.

(3) Report to all scheduled/required medical examinations.

(4) Complete required training.

(5) Establish a boundary around and identify Regulated Areas as required by this SOP.

(6) Use good hygiene practices specified in this SOP when working with toxic metals including washing hands, face, and any other exposed skin at the end of the activity, process,

or work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

(7) Remove contaminated PPE and wash hands, face, and any other exposed skin as noted above after performing work in a Regulated Area or as directed by a technical work document. See signs in Enclosure (4) for guidance.

NOTE: Code 900 will arrange for use of the change room and readily accessible washing facilities as necessary.

NOTE: Showering is required after working in an established Regulated Areas for cadmium or lead.

5. Definitions.

Administrative Controls: Methods used to minimize or control exposure to a hazard. Administrative controls include but are not limited to; job rotation schedules to reduce an employee's 8-hour TWA exposure to airborne hazards.

Authorized Use List (AUL): A list of hazardous materials allowed to be used in SERMC. The list uses a number of key data elements including product name, manufacturer's name, process control number, and/or stock number for search criteria. SERMC's AUL is maintained by Safety.

Ceiling: A Ceiling value is an exposure limit which shall at no time be exceeded during any part of a working exposure.

Engineering Controls: Methods used to minimize or control exposure to a hazard. Engineering controls include but are not limited to; substitution, isolation (i.e. enclosures and containments), wet methods (i.e. submersion or water spray), HEPA filtered tools, and ventilation.

High efficiency particulate air (HEPA): A filter that is at least 99.97% efficient in removing mono-dispersed particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters used with respiratory protection at SERMC are the P100 filters.

Medical Surveillance Action Level (MSAL): As defined by the Occupational Safety and Health Administration (OSHA), the MSAL is the airborne concentration of a hazard, as averaged over an 8-hour period, which initiates medical monitoring.

NIOSH: National Institute for Occupational Safety and Health. Under the OSHA Act, NIOSH is the testing, approving and certifying agency for respiratory protection devices.

OSHA: Occupational Safety and Health Administration. This organization was created by the Department of Labor to discharge the Department's responsibilities assigned by the Occupational Health Act. OSHA's mission is to save lives, prevent injuries and protect the health of America's workers.

P100 filters: Equivalent in protection to HEPA filters and intended for filtering dust, mist and fumes. "P" series indicates that this filter has the greatest resistance to atmospheres that may contain oil, i.e., "oil proof", which can degrade the efficiency of the filter media.

Permissible Exposure Limit (PEL): PELs are time weighted average (TWA) concentrations that must not be exceeded during an 8-hour work shift of a 40-hour work week.

Regulated Area: In accordance with OSHA, a Regulated Area is an area of work demarcated as to where an employee's exposure to airborne hazards can be reasonably expected to equal or exceed the PEL.

Time Weighted Average (TWA) concentration: The time weighted average concentration for a normal 8-hour workday for a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

Toxic metal: A metal that, when affected by heat or mechanical means, can create inhalation, ingestion and/or direct contact exposures that, in significant concentrations, can cause detriment to the health of personnel receiving the exposure.

6. Policies. The following policies will be used to prevent, to the maximum extent possible, overexposure and injuries related to personnel exposure to metals of toxic significance.

a. Exposure Monitoring. Exposure monitoring is required by references (b) through (g) to determine the extent of employee airborne exposure to hazards, including toxic metals. Results of exposure monitoring are used to implement process specific controls. Processes that have the potential to generate exposures to toxic metals covered by this SOP, and those processes identified in the IHS exposure-monitoring plan will be monitored.

b. Regulated Areas. A Regulated Area will be established when employee exposure to toxic metals can be reasonably expected to equal or exceed OSHA PELs.

NOTE: The only process performed by SERMC personnel identified as generating airborne exposures near or exceeding PELs for metals addressed in this SOP is blasting in the aluminum oxide blast booth.

(1) Regulated Areas will be demarcated with signs, see Enclosures (2) and (3), and a physical boundary, such as tape, rope, plastic sheeting, or a blast booth.

(a) Signs, including a "Caution Respirator Area" signs in accordance with reference (k), will be placed at open boundaries or access points to Regulated Areas.

(b) Only personnel trained and protected in accordance with the requirements of this SOP are permitted to enter Regulated Areas while work operations are in progress.

(c) Personnel will clean and remove any potentially contaminated PPE prior to leaving Regulated Areas using a "laydown area" at the area boundary if necessary.

(d) Upon completion of work and cleanup, signs and boundaries will be removed or covered.

(2) The following activities are prohibited in Regulated Areas; eating, drinking, smoking, use of Electronic Nicotine Delivery Systems (ENDS), chewing tobacco or gum, application of cosmetics, or storage of materials.

c. Methods of compliance. In accordance with references (a) thru (h), engineering and work practice controls will be implemented to reduce and maintain employee exposure to toxic metals below PELs.

(1) Substitution of materials. In all cases, when technically acceptable, less hazardous materials will be substituted in place of those that have the potential to generate hazards. Hazardous materials used at SERMC must be approved and entered on the AUL prior to use, in accordance with reference (j).

(2) Isolation of processes. Processes will be enclosed, such as with blast cabinets or containments, to prevent hazards from reaching the worker's breathing zone or skin.

(3) Engineered tools and equipment. Hazards associated with a specific process will be captured immediately at the point of generation by specifically designed tools or equipment, such as through the use HEPA vacuum tools, including the Clayton® sander and blast cabinets.

(4) Administrative Controls. Administrative controls such as job rotation schedules to reduce an employee's 8-hour TWA exposure to airborne hazards. References (c) thru (g) prohibit job rotation schedules as a method of reducing an employee's exposure below MSALs when work involves exposure to arsenic, beryllium, lead, cadmium, and hexavalent chromium.

(5) Wet method work practice. Use of a water spray or mist, when appropriate, to minimize airborne dust from dust generating processes such as paint removal and work area clean-up.

(6) Ventilation. Ventilation will be used to capture, reduce, or eliminate airborne hazards, e.g., dust, fume, mist, gases, etc., during industrial processes. Process specific mechanical exhaust ventilation requirements are specified in Enclosure (1) of reference (k).

(a) Local mechanical exhaust ventilation is primarily used to capture contaminants at the point of generation. Local ventilation must be positioned as close as possible to the point of generation to provide effective capture velocities and pull contaminants out of a workers breathing zone. An example of local exhaust at SERMC includes C925 movable vent hoods.

(b) General area mechanical exhaust ventilation reduces concentrations of toxic fumes and particulates by bringing clean air into a work area to dilute contaminated air and then exhausting the diluted air. This type of ventilation must be positioned to pull contaminants out of a workers breathing zone i.e. work must be positioned between the worker and air intake. An example of general area mechanical exhaust ventilation at SERMC includes the C912 blast booth ventilation system.

d. Respiratory Protection.

(1) Respiratory protection will be worn in accordance with reference (k).

(2) Enclosure (1) of this SOP identifies when respiratory protection is required for a process involving toxic metals.

e. Personal Protective Equipment (PPE). Personnel performing operations addressed in this SOP will wear PPE, in addition to regularly required safety glasses, hard hats, and safety shoes, to prevent skin, eye, and/or personal clothing contact. This PPE, includes coveralls, gloves, shoe covers, head covers, etc. Refer to Enclosure (1) of this SOP for process specific PPE guidance.

(1) Disposable coveralls should be worn except when performing hot work processes. Disposable coveralls specifically identified as flame retardant or melt resistant may be worn when performing hot work processes.

(2) PPE exposed to toxic metals will not be taken home unless cleaned.

(a) Reusable PPE, gloves, and respirators must be cleaned in accordance with the following paragraphs.

(b) Reusable coveralls such as blasting coveralls (and head covers, such as flash hoods) when used for toxic metal work processes will be turned over to Code 900 for laundering.

f. Hygiene areas and practices. Lavatories will be used to wash hands, faces, and exposed skin immediately after completing work and before eating drinking, smoking, using ENDS, or applying cosmetics.

(1) Personnel performing work that involves exposures above the PEL will, at a minimum, change into work coveralls prior to working and back into personal clothes after leaving the work area using the Code 900 change room located in the inside blasting area.

(2) Change room "clean-side" (with storage lockers for personal clothing), shower, and a "dirty-side" (with lockers for protective work clothing and equipment) will be used to prevent spread of toxic metal contamination. Use of SERMC regular locker rooms and showers is not permitted.

(3) Personnel performing work that generates exposures at or above the PEL for BERYLLIUM and CHROMIUM (VI) require a change into PPE prior to performing such work, removal of all exposed PPE after work prior to re-donning personal clothing, washing hands, face, and exposed skin, and leaving work.

(4) Personnel performing work that generates exposures at or above the PEL for LEAD, CADMIUM, or ARSENIC require a change into PPE prior to performing such work, removal of all exposed PPE after work, and showering prior to re-donning personal clothing and leaving work.

(a) If necessary, soap and towels for showering will be provided by Code 900.

(b) Suiting and Un-suiting signs from Enclosure (4) will be posted at change room (clean side and dirty side, respectively) and Regulated Area boundaries.

(4) Prior to removing PPE, including respiratory protection, used during toxic metal work processes it must be cleaned (vacuumed and/or damp wiped). Before storing any PPE, it will be cleaned in accordance with manufacturer's instructions.

g. Housekeeping. Prompt and timely cleaning must be performed to ensure all surfaces in work areas are maintained as free as practicable from accumulation of hazardous dust/debris.

(1) Dry sweeping, including the use of "fox tails" or "blowing down" of work surfaces, floors, and clothing/PPE with compressed air, is prohibited with the exception of cleaning performed within walk-in blast booths as follows.

(a) When sweeping, shoveling, or using compressed air to clean inside walk-in blast booths, ventilation must be operating and all personnel must be wearing a minimum of Tyvek® coveralls, gloves, and full-face respirator with P100 filters.

(b) Compressed air used for cleaning within walk-in blast booths must be regulated to less than 30 p.s.i.

(2) HEPA filtered vacuums will be used to clean work surfaces whenever practical.

(3) Wet sweeping (misting water onto dust while sweeping) may be used where vacuuming is ineffective.

h. Medical Surveillance. The medical surveillance program is designed to identify personnel at risk of adverse health effects from chronic exposure to toxic metals, to prevent toxic metal-induced diseases, and to detect and minimize existing toxic metal-induced diseases. The following requirements have been established in accordance with references (c) through (g).

(1) If personnel are assigned to operations expected to produce exposures at or above the MSAL for 30 days or more in a 12-month period they will be entered into medical surveillance for the applicable toxic metal(s).

(a) The 30-day criteria need not occur over consecutive days.

(b) Not all toxic metals have an OSHA regulated medical surveillance program.

(c) SERMC's Safety Department will enter personnel into appropriate medical surveillance programs when they have met the above criteria or processes/exposures that warrant medical monitoring are identified.

(2) Reference (i) provides guidance for administering exams/evaluations and is used at the occupational health physician's discretion.

i. Training. References (a) through (h) require Hazard Communication Training and applicable standard specific training (i.e. specific to the OSHA standard for a toxic metal) be provided to personnel who can be exposed to metals of toxic significance.

(1) The following Enterprise Safety and Management System (ESAMS) training will be used to provide SERMC's Toxic Metal Hazard Communication and process specific training requirements.

(a). SERMC Inorganic Arsenic Hazard Awareness Training, ESAMS Course 7508.

(b) SERMC Beryllium Hazard Awareness Training, ESAMS Course 7717.

(c) SERMC Cadmium Hazard Awareness Training, ESAMS Course 7509.

(d) SERMC Hexavalent chromium (Cr VI) Hazard Awareness Training, ESAMS Course 7510.

(e) Lead Awareness - Non-Lead Workers (Possible Contact), ESAMS Course 322.

(f) SERMC Toxic Nickel Hazard Awareness Training, ESAMS Course 7718.

(g) VLS Missile Blast Residue HAZCOM, ESAMS Course 2147.

(2) Training will be assigned to affected Codes in ESAMS via Duty Tasks based on Periodic Industrial Hygiene Survey (PIHS), at the discretion of the SERMC Safety Department, and responsible Supervision.

j. Records. Training records will be maintained in ESAMS. Medical Surveillance records will be maintained by BUMED and the SERMC Safety Department.

k. Waste Disposal/ Regulated Waste Management. As required by reference (1), prior to generating hazardous waste, shops and codes must notify the Safety and Environmental Department and plan for storage, labeling, and management of waste containers.

7. Forms. There are no forms associated with this SOP.

/s/

Aaron E. Moore, C106

SERMC Toxic Metal Work Processes: Minimum Requirements

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The following table identifies processes commonly performed by SERMC personnel that involve metals of toxic significance. **In addition to regularly required PPE and PPE to prevent skin/personal clothing contact with hazardous materials**, the controls and/or respiratory protection identified must be used when performing these processes. This listing is not all-inclusive and is subject to change due to process or material substitution or replacement. Changes in process or materials may require a different degree of protection or hazard awareness training. Contact the Safety Department whenever changes to a process or material usage occur or if a process does not appear in the following table.

Code Hazard / Process	METAL INVOLVED	Potential Exposure	Engineering controls, Notes, and Process specific PPE
Code 106 Contractor oversight of Blasting worksites (post blast) Welding worksites	Beryllium	Skin Contact	<ul style="list-style-type: none"> • Ensure Contractor blasting operations secured. • Ensure Contractor ventilation is operating. • Wear PPE to prevent skin and clothing contact. • Wash hands, face, and exposed skin.
	Chrome VI		
	Cadmium		
	Nickel		
Code 106 Uptake Entry & Inspection	Arsenic	Skin Contact	<ul style="list-style-type: none"> • Remain outside hot work area during process. • Wear gloves and coveralls during uptake entry. • Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
Code 131 Contractor oversight of Blasting worksites (post blast) Welding worksites	Beryllium	Skin Contact	<ul style="list-style-type: none"> • Ensure Contractor blasting operations secured. • Ensure Contractor ventilation is operating. • Wear PPE to prevent skin and clothing contact. • Wash hands, face, and exposed skin.
	Beryllium		
Code 135 NDT Observing SERMC GMAW, CRES/ Stainless welding, Grade IV or V Brazing	Chrome VI	Skin Contact	<ul style="list-style-type: none"> • Remain outside hot work area during process. • Wear gloves. • Wash hands, face, and exposed skin.
	Cadmium		
Code 241 Uptake Inspection Observing Contractor welding operations	Arsenic	Skin Contact	<ul style="list-style-type: none"> • Remain outside hot work area during process. • Wear gloves and coveralls during uptake entry. • Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		
Code 261 Uptake Entry & Inspection	Arsenic	Skin Contact	<ul style="list-style-type: none"> • Wear gloves and coveralls during uptake entry. • Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		

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Code Hazard / Process	METAL INVOLVED	Potential Exposure	Engineering controls, Notes, and Process specific PPE
Code 200 Technical Assistance soldering	Lead	Skin Contact	<ul style="list-style-type: none"> Wear PPE to prevent skin and clothing contact. Wash hands, face, and exposed skin.
Code 287 Technical Assistance soldering	Cadmium	Skin Contact	<ul style="list-style-type: none"> Wear PPE to prevent skin and clothing contact. Wash hands, face, and exposed skin.
Code 294 Gun system repair residue contact	Arsenic	Skin Contact	<ul style="list-style-type: none"> Wear gloves. Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		
Code 295 Weapons launch exhaust residue contact	Arsenic	Skin Contact	<ul style="list-style-type: none"> Remain outside hot work area during process. Wear gloves and coveralls during uptake entry. Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		
Code 320 Contractor oversight of Blasting worksites (post blast) Welding worksites	Beryllium	Skin Contact	<ul style="list-style-type: none"> Wear PPE to prevent skin and clothing contact. Wash hands, face, and exposed skin.
	Chrome VI		
	Cadmium		
	Nickel		
Code 912 Abrasive blasting (All) Filter change-out and Cleaning booths	Arsenic	Skin Contact	<ul style="list-style-type: none"> Wear PPE to prevent skin and clothing contact. Minimum of half-mask respirators with P100 filters (full-face if sweeping/shoveling/using air) and vent are required. Wash hands, face, and exposed skin.
	Beryllium		
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		
Code 912 Aluminum oxide (AlO_x only) Abrasive blasting	<i>Beryllium</i>	Skin Contact <u>Airborne</u> <u>Exposure</u>	<ul style="list-style-type: none"> Remove personal clothing and wear PPE to prevent skin contact during blasting. Respiratory protection and vent required. Clean and remove exterior PPE in blast booth. Wash hands, face, and exposed skin.

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Code Hazard / Process	METAL INVOLVED	Potential Exposure	Engineering controls, Notes, and Process specific PPE
Code 921/924/925 Grade IV or V Brazing MIG & SMA Welding operations	Cadmium	Skin Contact/ Inhalation	<ul style="list-style-type: none"> • Verify respirator and ventilation requirements prior to starting work • Wear PPE to prevent skin and clothing contact. • Wash hands, face, and exposed skin.
	Chrome VI		
	Lead		
	Nickel		
Code 932 Gas Turbine Shop Uptake Entry H&J Inspections	Arsenic	Skin Contact	<ul style="list-style-type: none"> • Wear gloves and coveralls during uptake entry. • Wash hands, face, and exposed skin.
	Cadmium		
	Chrome VI		
	Lead		
	Nickel		
Code 941 Brush Electroplating	Nickel	Skin Contact	<ul style="list-style-type: none"> • Wear gloves and coveralls during entry. • Wash hands, face, and exposed skin.
Code 942 Monel water box entry Acid cleaning	Lead	Skin Contact	<ul style="list-style-type: none"> • Wear gloves and coveralls during entry. • **Maintain surfaces in a wet condition. • Wash hands, face, and exposed skin.
Code 944 Valve maintenance	Nickel	Skin Contact	<ul style="list-style-type: none"> • Wear gloves and coveralls during entry. • Wash hands, face, and exposed skin.
Code 951/952/957 Gun and VLS residue Clayton Sander on those components Glove box clean out	Arsenic	Skin Contact	<ul style="list-style-type: none"> • Wear PPE to prevent skin and clothing contact. • Wash hands, face, and exposed skin. • **Glove box clean out requires respirator
	Cadmium		
	Chrome VI		
	Lead		
Code 951/954 Alodine 1132 and Alodine 1201 (pens) for corrosion control	Chrome VI	Skin Contact	<ul style="list-style-type: none"> • Wear PPE to prevent skin and clothing contact. • Wash hands, face, and exposed skin.
Code 953/957 Soldering in shop	Lead	Skin Contact	<ul style="list-style-type: none"> • Wear gloves. • Wash hands, face, and exposed skin.

<h1 style="text-align: center;">DANGER</h1> <p style="text-align: center;">SERMC TOXIC METAL WORK AREA NO SMOKING OR EATING. AVOID CREATING DUST. <u>AUTHORIZED PERSONNEL ONLY</u></p>	
WORK BEING PERFORMED: _____ (i.e. Brazing, welding, blasting, entry, etc.)	
<p style="text-align: center;">TOXIC METAL(S) INVOLVED</p> <p>___ LEAD (POISON) ___ CADMIUM (CARCINOGEN, CAN CAUSE LUNG/KIDNEY DAMAGE) ___ CHROMIUM, HEXAVALENT (CARCINOGEN) ___ ARSENIC (CARCINOGEN) ___ BERYLLIUM (LUNG CARCINOGEN)</p>	
EXPOSURE HAZARD	PPE REQUIREMENTS
___ SKIN CONTACT ___ INHALATION HAZARD	___ GLOVES ___ COVERALLS ___ RESPIRATOR (SEE SERMC SOP 15)

**Regulated Area Suiting/Un-suiting Policies
For Operations Equal to or Exceeding the PEL**

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Operations that generate personnel exposure exceeding the PEL for cadmium, lead, or beryllium, or where arsenic exposure can cause skin or eye irritation, require the use of change rooms equipped with storage facilities for personal clothes and separate storage facilities for protective clothing and equipment.

Currently the only process performed at SERMC expected to generate airborne exposures above a PEL is Aluminum Oxide (AlO₃) blasting exceeding the PEL for beryllium.

Personnel performing this process will be required to remove personal clothing and don disposable coveralls prior to performing work.

POST A COPY OF THE FOLLOWING, SIGN (1), AT THE CHANGE ROOM, CLEAN SIDE.

Sign 1

<i>INSIDE BLAST BOOTH BLASTING Beryllium PEL operations <u>Suiting Requirements</u> Change Room Clean Side</i>
The following actions are required when performing blasting in Inside blast booth that can generate exposures above beryllium Permissible Exposure Limits:
Remove personal clothing or uniform and place in locker in clean side.
<ul style="list-style-type: none">➤ Don one (1) pair Body Filter 95+ disposable coveralls➤ Obtain gloves and disposable shoe covers.
Proceed to Regulated Area

**Regulated Area Suiting/Un-suiting Policies
For Operations Equal to or Exceeding the PEL**

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POST A COPY OF THE FOLLOWING, SIGN (2), AT THE ENTRANCE TO THE
REGULATED AREA.

Sign 2

<i>INSIDE BLAST BOOTH BLASTING</i> <i>Beryllium PEL operations</i> <i><u>Suiting requirements</u></i> <i>Entering Regulated Area Instructions</i>
<p>The following actions are required prior to entering the Regulated Area for Inside blast booth operations that can generate exposures above beryllium Permissible Exposure Limits:</p> <p>After donning disposable coveralls in clean room, the following PPE is required for blasting in the Inside blast booth:</p>
Don additional PPE
<ul style="list-style-type: none">➤ Don blasting coveralls.➤ Don gloves and shoe covers.➤ Don Respiratory Protection.
<p>Ensure Blast Booth entrance is posted with:</p> <ul style="list-style-type: none">➤➤ <i>"Danger SERMC Toxic Metal Work Area" sign, Enclosure (2) of SOP 21.</i>
Enter Regulated Area

Regulated Area Suiting/Un-suiting Policies
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POST A COPY OF THE FOLLOWING SIGN (3) AT THE EXIT OF THE
REGULATED AREA.

Sign 3

<p><i>INSIDE BLAST BOOTH BLASTING</i> <i>Beryllium PEL operations</i> <i><u>Un-suiting requirements</u></i> <i>Exiting Regulated Area Instructions</i></p>
<p>The following actions are required when exiting the Regulated Area for Inside blast booth operations that can generate exposures above beryllium Permissible Exposure Limits:</p>
<p>Remove outer (exposed) PPE</p>
<ul style="list-style-type: none">➤ Clean <u>outer</u> pair of coveralls (removing dust and debris, vacuuming preferred) while in booth with vent running.➤ Clean respirator (removing dust and debris, vacuuming preferred) and remove.➤ Remove <u>outer</u> pair of coveralls. <i>If work is not complete, place outer coveralls in hanging bags and store at blast booth for re-use until turning over for laundering.</i>➤ Clean and remove shoe covers. <i>Exit Regulated Area wearing disposable coveralls.</i>➤ Clean and remove gloves.
<p>* De-post Regulated Area (if work is complete).</p>
<p>Proceed to dirty side of Change Area.</p>
<p>Enter dirty side of Change Room.</p>

Regulated Area Suiting/Un-suiting Policies
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POST A COPY OF THE FOLLOWING SIGN (4) AT THE ENTRANCE OF THE
DIRTY SIDE OF CHANGE AREA.

Sign 4

<p><i>INSIDE BLAST BOOTH BLASTING Beryllium PEL operations <u>Un-Suiting requirements</u> Change Room Dirty Side</i></p>
<p>The following is required when entering the dirty side of a change room after having blasted in Inside blast booth that can generate exposures above beryllium Permissible Exposure Limits:</p>
<p>Remove disposable Coveralls</p>
<p>➤ Remove disposable coveralls and inspect for evidence of Turn over re-usable PPE to Code 900 for laundering, as necessary, or dispose of properly. If work is not complete wash hands and face prior to eating, drinking, applying cosmetics (including lip balm or sun screen) If work is not complete, label and stage in bags, for re-use, as necessary, until work is complete.</p>
<p>Shower, using Code 900 provided soap and towels.</p>
<p>Exit to clean side of change area and don personal clothing or uniform.</p>
<p>Return to regular work.</p>